

What is claimed is:

- 1 1. A plasma display panel comprising:
  - 2 a first substrate having a plurality of electrode
  - 3 pairs covered by a dielectric layer, at least one of
  - 4 electrodes constituting each said electrode pair being
  - 5 separated in a thickness direction of said dielectric layer
  - 6 to form a lower electrode and an upper electrode, said
  - 7 lower and upper electrodes being connected electrically
  - 8 each other such that said lower and upper electrodes
  - 9 becomes equipotential;
  - 10 a second substrate arranged in an opposing relation
  - 11 to said first substrate with a gap; and
  - 12 discharge gas filling said gap between said first
  - 13 substrate and said second substrate.
- 1 2. A plasma display panel as claimed in claim 1, wherein
  - 2 said upper electrode includes electrodes provided in a
  - 3 plurality of different layers in the thickness direction of
  - 4 said dielectric layer.
- 1 3. A plasma display panel as claimed in claim 2, wherein
  - 2 each of said electrodes of each said electrode pair
  - 3 includes said lower electrode and said upper electrode, one
  - 4 of said upper electrodes includes opposing electrodes
  - 5 provided in a plurality of different layers and the other
  - 6 opposing upper electrode includes opposing electrodes
  - 7 provided in the same number of different layers and
  - 8 corresponding ones of said electrode layers of said
  - 9 opposing upper electrodes are in the same position in the

10 thickness direction of said dielectric layer.

1 4. A plasma display panel as claimed in claim 3, wherein  
2 said one of said opposing upper electrodes and said the  
3 other of said opposing upper electrodes are formed  
4 symmetrically about a center of a first sustain gap between  
5 one of said opposing lower electrodes of each said  
6 electrode pair and the other lower electrode.

1 5. A plasma display panel as claimed in claim 4, wherein  
2 a second sustain gap is provided between one of said upper  
3 electrodes and the other upper electrode, which are  
4 mutually opposing with a gap therebetween, which gap is the  
5 smallest among gaps between said upper electrodes of said  
6 electrode pair, and said second sustain gap is  
7 substantially coincident with said first sustain gap.

1 6. A plasma display panel as claimed in claim 4, wherein  
2 a second sustain gap is provided between one of said upper  
3 electrodes and the other upper electrode, which are  
4 mutually opposing with a gap therebetween, which gap is the  
5 smallest among gaps between said upper electrodes of said  
6 electrode pair, and one of said first sustain gap and said  
7 second sustain gap is within the other region.

1 7. A plasma display panel as claimed in claim 3, wherein  
2 a center of said first sustain gap is deviated from a  
3 center of said second sustain gap.

1 8. A plasma display panel as claimed in claim 1, wherein  
2 each of said electrodes of each said electrode pair  
3 includes said lower electrode and said upper electrode and

4 at least one divided electrode having a potential equal to  
5 the potential of one of said upper electrodes is provided  
6 on a side of said one upper electrode corresponding to at  
7 least one of said lower electrodes in a plane, which is the  
8 same as a plane of said one upper electrode, remote from  
9 said other lower electrode.

1 9. A plasma display panel as claimed in claim 1, wherein  
2 a width of said upper electrode is a half of a width of  
3 said lower electrode or less.

1 10. A plasma display panel as claimed in claim 1, wherein  
2 a width of said upper electrode is one fifth a width of  
3 said lower electrode or less.

1 11. A plasma display panel as claimed in claim 1, further  
2 comprising a connecting wiring for electrically connecting  
3 said upper electrode to said lower electrode to make said  
4 upper and lower electrodes equipotential and a low  
5 resistance wiring for leading said upper electrode together  
6 with said lower electrode externally.

1 12. A plasma display panel as claimed in claim 11,  
2 further comprising partition walls formed on said second  
3 substrate extending in parallel in a direction orthogonal  
4 to said electrode pairs formed on said first substrate,  
5 wherein said first substrate includes discharge cell  
6 regions uniformly partitioned by said partition walls and  
7 regions for separating the plurality of said electrode  
8 pairs and said connecting wiring is formed in a region of  
9 each said discharge cell region except said second sustain

10 gap between said upper electrodes corresponding to said  
11 electrode pair.

1 13. A plasma display panel as claimed in claim 11,  
2 wherein said low resistance wiring is formed either on said  
3 substrate on which said lower electrodes are formed or in a  
4 position of said upper electrode in a thickness direction  
5 of said dielectric layer.

1 14. A plasma display panel as claimed in claim 1, wherein  
2 said upper electrode is formed in a single layer and said  
3 dielectric layer includes a first dielectric layer  
4 deposited on said substrate and underlying said upper  
5 electrode and a second dielectric layer covering said  
6 substrate having said first dielectric layer.

1 15. A plasma display panel as claimed in claim 14,  
2 wherein said upper electrodes constitute a single layer  
3 upper electrode pair corresponding to said electrode pair  
4 and said dielectric layer is formed below said second  
5 sustain gap between said upper electrode pair such that  
6 said dielectric layer contains said second sustain gap.

1 16. A plasma display panel as claimed in claim 1, wherein  
2 said discharge gas contains at least one of xenon, krypton,  
3 argon and nitrogen as exciting gas for generating  
4 ultraviolet light for exciting a fluorescent member and a  
5 partial pressure of the exciting gas is 100hPa or higher  
6 when said exciting gas contains one of xenon, krypton,  
7 argon and nitrogen.

1 17. A method for fabricating a plasma display panel,

2 comprising the steps of:

3           forming a first electrode pair on a surface of a  
4 first substrate, said first electrode pair constituting  
5 lower electrodes;

6           forming a first dielectric layer covering at least a  
7 first region between said first electrode pair;

8           forming a second electrode pair on said first  
9 dielectric layer, said second electrode pair constituting  
10 upper electrodes;

11           depositing a second dielectric layer covering said  
12 first substrate including said first dielectric layer;

13           arranging said second substrate in an opposing  
14 relation to said first substrate with a gap therebetween;  
15 and

16           filling said gap with discharge gas.

1 18. A method for fabricating a plasma display panel, as  
2 claimed in claim 17, wherein the step of forming said first  
3 dielectric layer is performed by patterning said first  
4 dielectric layer before said first region is at least  
5 covered thereby.

1 19. A method for fabricating a plasma display panel, as  
2 claimed in claim 17, further comprising, after the step of  
3 forming said second electrode pair, the step of  
4 simultaneously forming connecting wiring for connecting  
5 said second electrode to a first electrode corresponding to  
6 said second electrode and a common electrode wiring for  
7 reducing a resistance of lead wiring of said first

8 electrode and said second electrode.

1 20. A method for fabricating a plasma display panel, as  
2 claimed in claim 17, wherein the step of forming said  
3 second electrode is performed by forming connecting wiring  
4 for connecting said second electrode to a first electrode  
5 corresponding to said second electrode and a common  
6 electrode wiring for reducing a resistance of a connecting  
7 wiring of said first electrode and said second electrode  
8 simultaneously with the formation of said second electrode.